

REMARKS/ARGUMENTS

Claims 12, 15, and 17 are amended by this response. Claims 1-11 and 13 are canceled. No claims are added. Accordingly, claims 12 and 14-20 remain pending in the instant application.

As a threshold matter, in order to expedite prosecution of the apparatus claims, method claims 1 and 3-11 are hereby canceled without prejudice to filing one or more continuation applications directed thereto.

Sole pending independent apparatus claim 12 has been amended to recite as follows:

12. An apparatus for providing power to a model vehicle, the apparatus comprising:

a control knob configured to be rotated by a user over a range of positions;
a light source;

a sensing element in communication with the control knob and configured to detect a speed of rotation of the knob over a period of about 50 milliseconds or less, the sensing element comprising an optical detector;

a rotatable disk in communication with the knob and intervening between the light source and the optical detector; and

a processor in electrical communication with the sensing element, the processor configured to correlate knob rotational speed with a magnitude of power provided from a source to a model vehicle by multiplying a distance of rotation of the knob by a factor based upon speed of knob rotation. (Emphasis added)

In the latest office action, apparatus claim 12 was rejected as obvious under 35 U.S.C. §103(a) in view of a number of references. These obviousness claim rejections are overcome as follows.

First, claim 12 was rejected as obvious based upon the Procab Manual reference considered alone. However, the Examiner is respectfully reminded that in order to establish a *prima facie* case of obviousness, "the prior art reference (or references when combined) must teach or suggest all the claim limitations." MPEP 2142.

Submitted herewith is a supplemental declaration of co-inventor Mr. Louis G. Kovach II, indicating that he disassembled the Procab device, and identified the encoder present therein as being operable based on mechanical, rather than optical, principles. In view of the failure of the Procab device to teach or even suggest all of the elements of pending independent claim 12, it is

respectfully asserted that this claim cannot be considered obvious based upon the Procab Manual. Continued rejection of the pending claims as obvious based upon the Procab Manual is improper, and this claim rejection should be withdrawn.

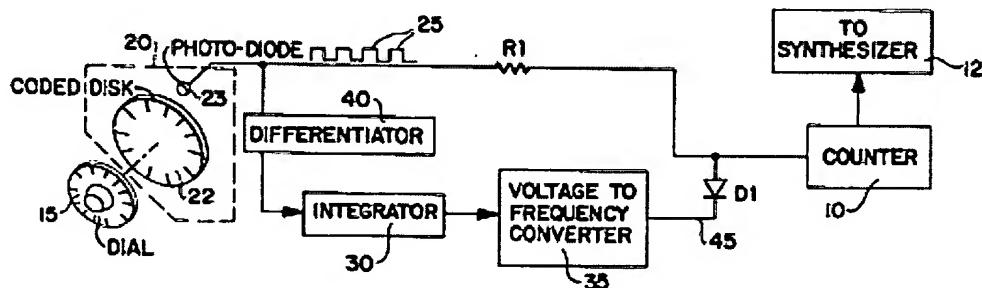
Claim 12 has also been rejected as obvious based upon the combination of U.S. Patent No. 5,749,547 to Young et al. ("the Young Patent"), and U.S. Patent No. 4,352,010 to Koogler ("the Koogler Patent"). However, the Examiner is respectfully reminded of a second important requirement for establishing a *prima facie* case of obviousness:

there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings (MPEP 2143).

This teaching or suggestion to make the claimed combination must be found in the prior art, not in Applicant's own disclosure. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed.Cir. 1991).

Here, there is absolutely no teaching in the Koogler Patent to suggest its combination with the Young Patent. The Young Patent relates to a system for controlling a model vehicle such as a locomotive, utilizing an apparatus having a control knob. The Young Patent contains no teaching or suggestion regarding an optical detector configured to correlate a speed of knob rotation with velocity of the model vehicle.

In an effort to provide this absent teaching, the Examiner has combined the Young Patent with the Koogler Patent. FIG. 1 of the Koogler Patent is reproduced below:



The Koogler Patent describes a tuning circuit, and in particular a tuning circuit specifically for use in a radio frequency device such as a radio transmitter or receiver: The Koogler Patent, however, contains absolutely no teaching that this apparatus be used in controlling a model vehicle, for example in a system as is described in the Young Patent.

Moreover, the Koogler Patent fails even to teach such a prospective application. For example, as shown in FIG. 1, the apparatus of the Koogler Patent includes an integrator circuit (30), the output of which:

is an analog voltage which is a function of the rate at which pulses are applied thereto, or in other words, it is a voltage related to the rate at which dial generated pulses are produced. (Emphasis added; col. 4, lines 58-63)

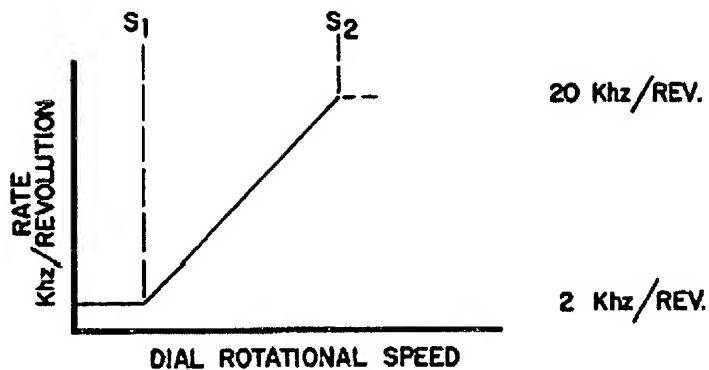
The integrator circuit of the Koogler Patent thus produces output based upon integration of a series of pulses previously received from the control knob. Such a circuit, however, would not be suited to control velocity of a model vehicle in the manner described in the Young Patent. In particular, operation of the integrator element would offer at least two significant problems in attempting to control a model vehicle in a manner accurately reproducing real-world conditions.

First, integration of a series of previously received pulses would not accurately reflect the desired instructions of the user. For example, a user may instruct a model locomotive to accelerate by turning a control knob clockwise at a relatively constant rate of rotation. Suddenly, however, the user desires to slow or even halt the train, and thus abruptly rotates the control knob in the opposite direction (counterclockwise) at a high rate of speed.

Under such conditions, the integrator would function to inhibit responsiveness of the model train to the user's input. Specifically, during initial stages of the deceleration command, integration of the series of pulses previously received from the control wheel would continue to indicate acceleration of the train, rather than the sudden deceleration actually desired by the user. Such a result would not reproduce real world conditions, wherein a train does not actually experience an initial period of continued acceleration in response to a braking command..

This delay in registering the actual intent of the user, would certainly render the apparatus of the Koogler Patent unsuitable for use in controlling a model vehicle. For this reason alone, no motivation is present in the Koogler Patent to suggest its combination with the Young Patent.

A second problem using of the Koogler Patent for vehicle control is illustrated in connection with FIG. 2 (reproduced below):



Specifically, the Koogler Patent's reliance upon integrator necessarily and inevitably results in a linear correlation between dial rotational speed and the resulting output of the apparatus. Of course, such a linear relationship does not accurately mimic the actual conditions of vehicle operation, wherein a user may seek to exercise varying changes in vehicle velocity in response to real world demands, for example during violent braking or rapid acceleration events.

The linear correlation between knob rotation speed and resulting velocity imposed by the integrator of the Koogler Patent, would also render this reference unsuitable for use in controlling a model vehicle. On this additional ground, no motivation can be found in the Koogler Patent for its combination with the Young Patent.

Given the Koogler Patent's absolute failure to contain any teaching, or even suggestion, for its combination with the Young Patent, where is the Examiner finding motivation to combine these references?

The instant application contains substantial disclosure regarding the value of an apparatus having an optical sensor for correlating a speed of knob rotation with velocity of a model vehicle. However, the Examiner is respectfully cautioned that reliance upon Applicant's own disclosure to provide motivation to combine, is strictly forbidden as hindsight:

The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art. (Emphasis added; MPEP 2142)

Based upon the failure of the Young and Koogler Patents to provide any motivation for their combination, it is respectfully asserted that the pending claims cannot be considered

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obvious in view of those references. Continued rejection of the pending claims on this ground is improper, and the obviousness claim rejections should be withdrawn.

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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